

4 identification number, wherein said passive RFID tags are configured to receive
5 and transmit signals; and
6 (B) a tag reader having means for transmitting a signal to said passive RFID tags and
7 means for resolving contention resolution between multiple RFID tags that
8 respond to said signal;
9 (C) wherein said passive RFID tags is configured to receive a signal from said reader,
10 evaluate said signal relative to said first and second permanent identification
11 numbers, and reply to said signal if appropriate.

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93. The electronic inventory of claim 92, wherein at least one of said plurality of
passive RFID tags has a sensor; and means for transmitting the contents of said sensor.

Sub E1
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94. The electronic inventory system of claim 92 wherein said signal is a clock signal,
and said tag reader emits a series of clock signals, each clock signal defining a time slot.

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95. The electronic inventory system of claim 94, wherein each passive RFID tag counts
the clock signals and when the count is equivalent to said first permanent identification number,
transmits its identification ID to said tag reader.

96. The electronic inventory system of claim 95, wherein said tag reader accumulates
the identification numbers of each tag that responded.

97. The electronic inventory system of claim 96, wherein said tag reader polls all tags
that responded.

98. The electronic inventory of claim 92, wherein said first and second permanent
identification numbers are a tag identification number (Tag ID) and a manufacturer number,
wherein said signal is a clock signal, wherein each tag further comprises:
means for receiving a wake-up signal followed by a first clock signal;
means for incrementing a first tag count in response to said first clock signal;

6 means for transmitting the Tag ID assigned to the tag when said Tag ID corresponds to
7 said first tag count;
8 means for receiving a second clock signal;
9 means for incrementing a second tag count in response to said second clock signal; and
10 means for transmitting the manufacturer number assigned to the tag when said
11 manufacturer number of said each tag corresponds to said second count.

1 99. The electronic inventory of claim 92, wherein said first and second permanent
2 identification numbers are a tag identification number (Tag ID) and a manufacturer number,
3 wherein said signal is a clock signal, wherein said tag reader comprises:

4 means for transmitting a wake-up signal followed by a first clock signal;
5 means for incrementing a first reader count in response to first clock signal,
6 means for receiving a Tag ID transmitted by a tag in response to said first clock signal;
7 means for storing a given first reader count when more than one tag responds to said first
8 clock signal that corresponds to said given first reader count;
9 means for transmitting said given first reader count followed by a second clock signal; and
10 means for receiving a manufacturer number transmitted by a tag in response to said second
11 clock signal.

1 100. A method for conducting an electronic inventory of radio frequency identification
2 tags, wherein each tag is assigned a permanent identification ID, a manufacturing number and a
3 lot number, the method comprising the steps of:

- 4 (A) transmitting a first clock signal to a plurality of passive radio frequency
5 identification (RFID) tags, wherein each tag is assigned a first permanent
6 identification number and a second permanent identification number, wherein said
7 RFID tags are configured to receive and transmit signals; and
8 (B) a tag reader having means for transmitting signals to said plurality of RFID tags,
9 means for transmitting at least one signal to said RFID tags and means for
10 resolving contention resolution between multiple RFID tags that respond to said
11 signal;

12 (C) wherein said RFID tags are configured to receive a signal from said reader,
13 compare said signal relative to said two permanent identification numbers, and
14 reply to said signal if appropriate.

1 *SUB 105* 101. An automated, real-time electronic inventory system, comprising:
2 (A) a plurality of passive radio frequency identification (RFID) tags, wherein each tag
3 is assigned a plurality of identification numbers, wherein said RFID tags are
4 configured to receive and transmit signals; and
5 (B) a tag reader having means for transmitting a signal to said passive RFID tags and
6 means for resolving contention resolution between multiple RFID tags that
7 respond to said signal;
8 (C) wherein said RFID tags is configured to receive a signal from said reader, evaluate
9 one or more of said plurality of identification numbers, and reply to said signal if
10 appropriate.

1 *B* 102. The electronic inventory system of claim 101, wherein said tag reader can initiate
2 an immediate read of said passive RFID tags, a specific RFID tag read, or a timed broadcast read
3 of said passive RFID tags.

1 103. The electronic inventory system of claim 101, wherein at least one of said plurality
2 of RFID tags has a sensor.

1 *SUB E3* 104. An automated, real-time electronic inventory system, comprising a plurality of
2 *Contd* *EH* passive RFID tags and a tag reader that performs multiple reads of said passive RFID tag to avoid
3 time slot contention.

1 105. An electronic article surveillance system, comprising:
2 a database having stored therein an inventory of merchandise, wherein each piece
3 of merchandise has associated therewith a tag identification;
4 a tag, wherein said tag is configured to be attached to said merchandise, said tag
5 having associated therewith a tag identification;